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16 October 1981

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2188

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BUREAUCRATIZATION, CENTRALIZATION OF VHJ CRITICIZED

Prague HOSPODARSKE NOVINY in Czech 4 Sep 81 p 3

[Article by Jaroslav Smrcka, Prague Institute of Management: "Where the Stereotype Failed"]

[Text] In seeking higher effectiveness in production, the formation of an optimum organizational structure somehow remains of the periphery of our attention. Yet, it is precisely an appropriate rational structure which makes it possible to minimize resources and rationalize production. Research by the Prague Institute of Management, demonstrated the relationship of the most important factors, i.e., between the number of production branches which the given VHJ/Economic Production Unit* service, and the measure of internal cooperation on the one hand and the measure of management centralization on the other.

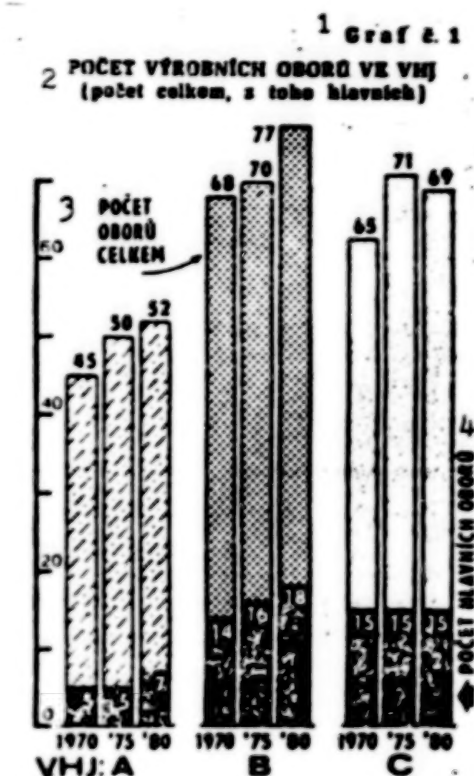
With the establishment of the VHJ as the basic management element in the enterprise economic sphere, certain organizational changes have, in the last 2 or 3 years begun to be carried through, especially in the relationship of the VHJ with the enterprise. At the same time, the link between the ministry and the enterprise has remained virtually unchanged. If we subject the changes in management and organizational relations between the VHJ and their subordinate units to a more detailed analysis, we arrive at the conclusion that management in this area is gradually being centralized. This centralization is manifested organizationally primarily as a passage of certain VHJs of the trust type into enterprise-like entities.

Organizational structures must be understood as rationalization instruments or forms within which are arranged the management and executive processes which must be carried out in the interest of meeting the goals which had been laid out. In creating organizational forms, we must respect both the character of the processes under way in a given unit, and the character of the goals it is to meet. In making decisions on the creation of organizational structures of new units, or on organizational changes in already existing units, we must therefore base ourselves on an analysis of the processes and relations among them, and this within a given unit, as well as in relation to its environment.

*I am not naming the VHJs in which we conducted our research in 1980, since the Management Institute promised them anonymity in the publication of the findings with respect to the quality and problems of their management.

Two Factors

Research of factors which affect the organizational structures of VHJ and enterprises, produces some interesting results. These, as yet, are only preliminary findings emanating from a gradual examination of theoretical hypotheses. The purpose of the preliminary research carried out in five VHJs or three branches, was the examination of the hypothesis of the effect of the organization's size, number of branches, and cooperation with the VHJ management structures.



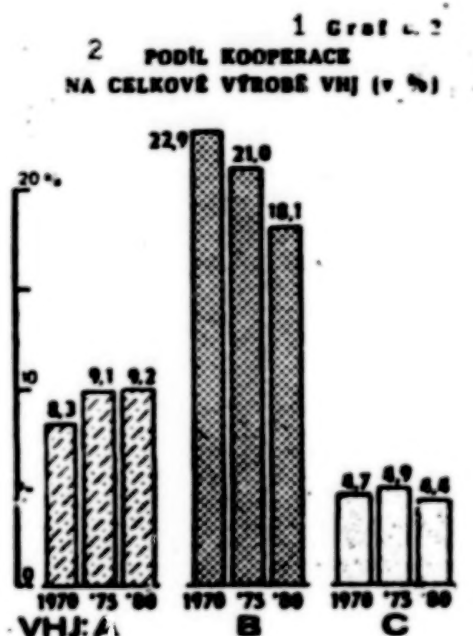
5 Poznámka: U všech grafů výrobní hospodářská jednotka A je koncernem od roku 1981, výrobní hospodářská jednotka B je trůstem od roku 1965 a výrobní hospodářská jednotka C je koncernem od roku 1980.

1 - Diagram No. 1; 2 - Number of production branches in the VHJ (overall number, of which the principal); 3 - Overall number of branches; 4 - Number of principal branches; 5 - Note: In all diagrams, the economic production unit "A" has been a concern since 1981, economic production unit "B" has been a trust since 1965, and economic production unit "C" has been a concern since 1980.

The research demonstrated that the size of the organization (in our case the VHJ) in and of itself does not have as great an effect on the management structure as the number of production branches which the VHJ services, and the measure of cooperation within the VHJ. Since, during the past 10 years the number of branches has been increasing in all the examined VHJs, we can conclude from this a certain objective tendency which will probably continue in future years. This development is affected by a considerable number of factors: The possibility of producing other products on already installed equipment, independent production of parts in short supply and

semifinished articles, application of research in related branches, etc. Certain foreign analyses show similar relationships which affect the increase in the number of branches, groups of products, production series, etc.

Under these circumstances, management becomes more demanding, especially for the upper management echelons in a progressive, rather than linear fashion. If, for example, expansion of VHJ activity by two additional branches represents 10 percent, the demand on management will increase by 25 percent. From Diagram No. 3 we see that the fastest increase occurred in the number of employees in the general directorates. Not even this increase, however, fully reflects the higher requirements which arise during the same period. According to estimates by some employees of the examined VHJ, their workload increased by 50-100 percent. The growth of administrative responsibilities was a part of the demand on management. This in itself, however, would basically be quantitative growth. The qualitative aspect of this process consisted of ensuring new operations and tasks related to new and different requirements.



1 - Diagram No. 2; 2 - Share of cooperation in the overall production of the VHJ (in percent).

Inclusion of a new branch does not only represent expansion of operations by an additional item. It is also necessary to understand the specifics of the new production in depth and in all its implications. This represents a great time burden for the respective workers, especially in the initial period. At the same time, pressure increases when handling additional new tasks. The management system begins to be overloaded and this will result in slower executing of tasks, application of simpler methods, and poor quality work. As a consequence, the lower echelons of management start receiving directives which are not mutually coordinated. Management is thus reduced to handling only the most urgent problems until it finally turns into a formalist, bureaucratic instrument.

Under these circumstances, it has been demonstrated that the road to effective answers to problems is not in more centralization, as it usually seems but, on the contrary, in the setting up of structures which will bring about high quality, reliable, but also flexible management, i.e., decentralization of routine tasks, while maintaining centralization of conceptual decisionmaking. As a rule, the problem does not lie in decentralization of all management functions to the lower echelons, but rather in creating a firm parameter of conceptual management within which the responsibility and jurisdiction for routine tasks is passed on to the lower management levels.

Trust or Concern

The number of branches and their variety are not the only important factor which affects the organizational structure. Another factor which has been shown significant is the measure of cooperation within the VHJ. In the quantitative aspect, we can define the measure of cooperation as the ratio between production performed for other units within the VHJ and the overall VHJ production. In the qualitative aspect, we can distinguish the following types of cooperation: Sequential, reciprocal, and multiple.

Sequential cooperation occurs, for example, when one enterprise produces articles destined for another. Reciprocal cooperation means two enterprises producing for each other. Multiple cooperation is that which involves production exchange among more than two enterprises. While simple sequential cooperation does not, under normal conditions, require coordination with a higher management echelon, such is indeed mandatory in multiple cooperation. The more complicated the relations within the VHJ, the more it is necessary to manage the work of subordinate units in a centralized manner.

The prevailing type of cooperation and its share in overall VHJ production, therefore, represents another important factor affecting organization structures in the VHJ. If, for example, a VHJ services only a few branches but has within it extensive multiple cooperation, this provides a basis for centralized management (we are concerned here solely with problems of centralization or decentralization of prevailing management). In such cases the VHJ is usually organized as a branch enterprise. If a VHJ services a large number of branches among which cooperation is slight, it is desirable to set up decentralized management, of which a suitable form is a VHJ of the trust type.

When both these factors, namely, the number of branches and typed of cooperation, affect organizational structures in the same direction, there should not occur--at least not theoretically--problems as complicated as if the opposite were the case. For example, if there is in the VHJ extensive cooperation and the unit also services a large number of branches, the first factor suggests the creation of centralized structures which call for coordination by subordinate units; on the other hand, however, the work of the VHJ management in such a case becomes extremely demanding.

Answers may be sought in hiring additional personnel with appropriate qualifications. The management apparatus begins to grow without really resolving any problems. Relations with the management apparatus and its dealing with subordinate units get to be so complicated that they become ineffective. Then there appears a call for rationalization of management but within the framework, of course, of the already complicated management structures and their mutual relations. Much activity occurs only within

these structures, without any appreciable results. The system of management, however, can gradually depart from its original mission which--stated succinctly--is to orient the work of subordinate units in the direction of public interest, and creating prerequisites for the achievement of this goal.

Decentralization Versus Centralization

One of the disadvantages of decentralized structures is the tendency to orient one's efforts in directions which may not be the most desirable in terms of public interest. Such situations arise most often where there is a shortage of certain products. Answers are usually sought in setting up social priorities and creating instruments for their fulfillment. This is done on the assumption that higher management echelons are better qualified to meet the needs of society; and that is precisely the beginning of centralization in management responsibilities.

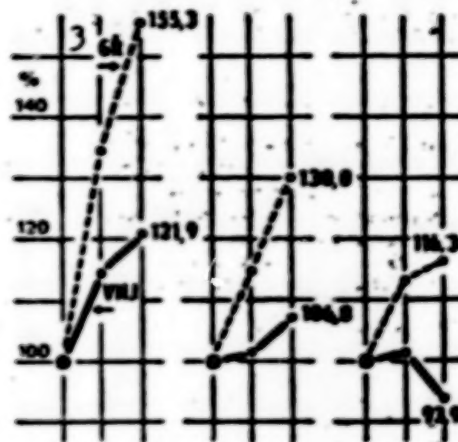
As a rule, the first to be centralized is the authority of setting social priorities within already existing structures. This is time consuming and complicated for these management echelons. Instead of issuing broad directives, this situation causes issuance of operational regulations. Some problems naturally occur repeatedly and it is therefore possible to resolve them by means of one set of instructions applicable to related situations. This is the logic of administrative management.

We have gone through the period of growth in administrative demand in the 1970s. In recent years we have begun to discover that there are limits to such a trend. For this reason, we have resorted to centralization of certain executive decisions and functions in enterprises and plants, in other words, the lower elements of the economic enterprise sphere. The transition of the trust-type VHJs into concerns, seems to offer a suitable solution. Trust enterprises become concerns which, from the legal, fiscal, and economic point of view, means plants. The VHJ becomes a basic element of management only in the sense, of course, that it is a large enterprise.

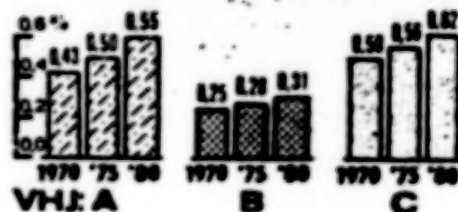
The VHJ should perform even development functions; however, this would only be possible if there is a change in their relationship with the ministry. As long as the VHJs are so limited in conceptual decisionmaking, and especially with such limited resources to engage in development as is the case presently, the prospect of conceptual management at this level is unrealistic. From the very beginning, the VHJs have been criticized for not ensuring conceptual development to a full degree, while, also since the beginning, management of the VHJ by the ministries has remained unchanged. It is more accurate to say that the present management system of the VHJ increasingly reaches into the operational area. They therefore cannot ensure development according to their own concepts and, simultaneously, carry out instructions from higher organs.

However, research has also shown that the concern-type VHJ appears even where it is not desirable to centralize management from the point of view of more effective relations with subordinate units (see VHJ "C"). Where there is a large number of branches and only slight cooperation among individual enterprises within the VHJ, the trust format is more effective in this respect. From this we can conclude that in such cases centralization occurs for different reasons, or that it is simply an organizational error. Results of good or bad organizational decisions, however, are usually noticeable only after a longer period of time, due to the so-called organizational inertia.

1 Graf 2.3
2 a) VÝVOJ POČTU PRACOVNÍKŮ VE VHJ
(počet pracovníků VHJ celkem, počet
pracovníků generálního ředitelství; rok
1970 = 100)



4 b) PODÍL PRACOVNÍKŮ GENERÁLNÍHO
ŘEDITELSTVÍ NA CELKOVÉM POČTU
PRACOVNÍKŮ VHJ (v %)



1 - Diagram No. 3; 2 - a) Development in the number of VHJ employees (total number of employees and the number of those working in the general directorate; 19700 = 100); 3 - General directorate/employees; 4 - b) Share of general directorate employees in the total of VHJ employees (in percentage).

The entire problem area is much more complicated and multi-faceted. What I have shown here are merely some of the objective relationships which must be respected in the formation of organizational structures. Organizational changes are not undertaken frequently and each one is quite expensive. Moreover, it always takes some time for people to adapt to change.

Organizational changes must reflect the character of the processes, conditions, and goals. They cannot be initiated subjectively and without analysis of the situation in which a given unit operates. Organizational changes, however, do not reflect the processes and goals passively, rather they help bring about their more effective--or less effective--achievement. Their effect is mirrored in the goals and the means for attaining them.

Generally speaking, we cannot say which organizational structures are better, whether the centralized or decentralized ones. For it depends not only on the criteria by which we evaluate what is better. The "better" is primarily that which is rational and effective. We consider rational precisely those structures which help us achieve the goals which have been laid out, and to do so with minimum resources, including human labor.

9496

CSO: 2400/1

FURTHER INTERVIEWS ON PRICE REFORMS PUBLISHED

Minister Responds to Public Questions

Warsaw TRYBUNA ROBOTNICZA in Polish 3 Aug 81 pp 1, 6

[Text] On Thursday and Friday of last week, Zdzisław Krasinski, minister plenipotentiary for price reforms, answered viewers' questions right after the news on TV. We add that the minister was appointed a month and a half ago. Until recently he was professor at the Academy of Economics in Poznań. We remind our readers that we published an interview with the minister in June. Also last Saturday there was a televised press conference devoted to the problem of prices.

The minister's answers were received with mixed reaction. Some found his answers profound, others evasive. Professor Krasinski's optimism appalled some people. Others considered that in connection with economic reform this was one of the last chances to pull out our economy from a dark tunnel which is leading nowhere.

Professor Zdzisław Krasinski said: "My view on the necessity of price changes is not especially original. There are many economists who agree with me, and I have drawn from their ideas. I follow the foreign press which often writes on this subject. And it says that price changes in Poland are a most difficult process. But it is indispensable."

We reproduced from tape some questions and answers which were televised on Thursday and Friday. The selection--as with any selection--is of course subjective.

/"Sir, you say that now one person spends 1,200 to 1,300 zlotys a month for food. How have you come up with these figures? Hasn't GUS [Central Statistical Office] helped you?"/

"This amount surprises a lot of people. It isn't something I invented. I have not relied on GUS surveys; I have relied on surveys that I carried out in March and April of a representative sampling of 7,000 households by asking them how much they spend on food. They were people from towns, large and small and from provinces, rich and poor. This is the figure that I got--exactly 1,243 zlotys. This figure is an average figure."

"Some answered that they spent 2,500 to 3,000 zlotys per person. But two percent of the households--the public doesn't know that such households exist--live on 600 zlotys per person a month."

/"By what means have you calculated an average increase of 125 percent? The examples, however, that you have given say that everything increases in price three to four times..."/

"I am giving prices which could increase the most. I want the public to visualize the most drastic changes. But at the end of the whole list I invariably got such an average rise in prices: 123 percent. It's just that the prices of some articles increase less than others."

/"The ratio of new prices for milk and butter figure out to 1:32. And at the same time in other countries a ratio of 1:8 or 1:10. Aren't the experiences of other countries taken into account?"/

"They are. But milk in our country at 10 zlotys per liter will be subsidized higher. The farmer gets 14.6 zlotys per liter at a procurement center. In all countries the cost of turnover amounts to 100 percent. In other words, 14 plus 14 equals 28 zlotys (the said 100 percent). Just do some figuring, don't these 28 zlotys support a ratio of 320 zlotys per kg of butter?"

/"We buy butter from Holland for 120 zlotys per kg, and this somehow profits them and our nation?"/

"Unfortunately, the sale of this butter from Holland is not of interest to our nation. We simply subsidize those prices just as we do the prices of other food."

/"In how many stages will the increase in prices take place?"/

"I foresee four stages: 1) bakery goods and grain products, and eventually sugar; 2) milk and milk products, perhaps vegetable shortening; 3) coal, raw materials, light, gas and furnace fuel; 4) meat and meat products, poultry and fish."

/"What kind of compensation do these bonds have? It looks to me like a poor job of paperhanging...The state can buy them back after, God knows, how many years later. Perhaps then one will be able to use them to wrap up herrings...if they will be..."/

"It's good not to lose our sense of humor. But let's be serious. There are four variants of compensation. Two of the variants have bonds, two don't. The public and trade unions will have to decide whether they want this paper. If the economy gets on its feet, it may turn out to be quite a good means of payment and will be paper which will be in demand."

/"Be as it may: price reforms won't bring goods to the market. Increase in production is the whole problem. And here--it's the head of the fish that smells--in other words, management of the economy is bad, yet it's plucked from the fire, and the minister himself proposes price increases."/

"Price increases are an inseparable element in economic reform--I represent this point of view and only this one. Trade unions say: first, economic reform, then

price reforms. But how is a reformed enterprise going to function normally, since it will begin its activities from an account placed on its head. How can this possibly be done? One must start counting somewhere; namely, from correct prices of costs. Otherwise, there will be a further vicious cycle."

/"But how will this bring goods to the market?"/

"Will price reform do it? No. Will economic reform do it? Yes. Lately, I have been putting it like this. If, for example, the United States could fully arrange it, this would be the prepared scenario: it first freezes prices for a year and gives 30 percent more dollars to their people. And after a year all the shelves there, in a country three and a half times richer than ours, are cleaned out, just as in our country. If, in the following years, they would ask their people to give back to us this 30 percent, then the shelves would again be full."

/"I have been an annuitant since 1973. I have a 2,500-zloty annuity. Today I pay 390 zlotys a month for gas and electricity. Now I will have to pay 1,170 zlotys. Where am I going to get the money?"/

"Mrs., you must get compensation. We are still thinking this over. For a family with several people, expenses for housing are distributed in a completely different way than for a household with one person. This has to be determined."

/"Do young couples, who are forced to rent apartments, receive more compensation. Aren't they after all loaning the government money--in the form of a housing deposit--for several years?"/

"They don't receive more compensation. I am making entreaties with the minister of finance, so that young couples between the age of 20 and 30 receive high consumption credits. Credits that are significantly higher than they have been up till now, but at a lower interest."

/"Talking about price changes without calling it by that name causes people to dispose of their money suddenly; it causes chaos, agitation, pressure on the market. This is sabotage, isn't it?"/

"People have good economic sense, even without such information, and thus money would be disposed of. Our public is wise. Everyone knows what's going on."

"In the brochure which will soon come out, there are concrete data. If we quickly come to terms with the trade unions, then as early as 15 September, the first price increase may take place. This would have to do with bread and flour products."

/"When and where will this brochure come out?"/

"Around 15 September, in "Ruch" newsstands, with an edition of 1 million copies."

Minister Answers Workers Questions

Warsaw EXPRESS WIECZORNY in Polish 4 Aug 81 p 6

[Text] Zdzisław Krasiński, chairman of the State Price Commission met with workers from the Warsaw Steel Works on 3 August. At 1430 hours, the conference hall was bursting at the seams. Temperatures had been running high at the meeting right from the very start.

Minister Krasiński had said at the outset: "The market situation today is tragic. Inflation accompanies a fall in production. On the market there are 500 billion zlotys which have been over-issued. The end is already drawing near, so one must act immediately. I am convinced that price increases are our only salvation. This is the result of the laws of economics. Already prices on some articles must now be increased by 123 percent. Practically everybody, among the 7,000 persons polled, does not believe that, after price reform, supplies will be better. So I have been travelling around, talking with people and trying to convince the public and find support from them."

Then the minister found himself bombarded with a great number of questions. We cite those questions which touched upon the most essential and the most often repeated issued.

/"Mr Minister, can price reform be carried out without informing the public how economic reform is to proceed? After all, isn't raising prices somewhat secondary in the face of a general economic reform. Why hasn't anyone told us till now what this reform is going to look like?"/

"I agree that the public should know what the draft economic reform looks like, especially now that it is ready. It is difficult to speak here for my colleagues, but I also consider it necessary to present the method for carrying out the reform, of which, as it has been talked about here, price increases are only an element. Toward the end of August, it will be possible to buy at 'Ruch' newstands an information brochure dealing with the principles of the economic reform, in which a lot of space will also be devoted to price reform."

/"Why is there a price spiral on the market? The price of food sold at stores is several times higher than the price the government has established. Why doesn't the government fight against speculation?"/

"Yes, in the past year prices at markets have risen 56 percent. Meat gets to the marketplace, but there isn't enough of it for rationing. Speculation needs to be combatted, not by fines, but by imprisonment and work camps."

/"On what basis have prices been calculated, and how will they be applied?"/

"Price increases are arranged in four stages. First, bread, sugar, and flour will be raised, then around October milk, milk products and oils. The third stage--meat, poultry and fish; the fourth--coal, gas and electrical power. This sequence may be subject to change. Prices on these articles would be put into effect in January. And how are prices calculated? Simple. Production costs of each article are accurately computed."

/"How does the problem of compensations look? On what basis were they worked out? Why isn't there any wage reform tied in with price reform?"/

"Unfortunately, up till now there hasn't been a table of compensation printed anywhere. It is in the brochure which I mentioned. There are four variants for compensation. In each variant, one of the social groups is favored. We will see which variant will be selected. Obviously, compensation must not be paid out indefinitely. Wage reforms will probably be carried out in January, 1983."

/"People do not believe that the new reform will improve the situation, because they have been already deceived many times before. When do you think the effect of price increases will be noticeable in the form of goods in the stores?"/

"At once, in the price of bread--if you're talking about meat, you'll have to wait a year. But I repeat, price reform is our last chance for our society to begin living normally. Poles do not believe that life will be better. I am trying to convince them that they are wrong. I believe in what I am doing."

9366

CSO: 2600/315

RESEARCH ROLE IN DEVELOPING MINERAL RESOURCES STRESSED

Bucharest REVISTA ECONOMICA in Romanian 28 Aug, 4 Sep 81

[Two-Part Article by Iosif Bercia, director general of the Central Institute of Research for the Extractive Industry and director of the Institute of Geology and Geophysics: "The Growth of the Contribution of Scientific Research to the Extension of Available Mineral Resources"]

[No 35, 28 Aug 81 pp 3-4 Part I]

[Text] The achievement of the program for economic growth, as established by the 12th Congress of the Romanian Communist Party, is influenced to a good degree by providing the national economy with the necessary amounts of material and energy resources. Currently, a portion of the raw materials necessary for industrial production is obtained through imports, as is the case of iron ore, coke, petroleum and so forth. The continuing fluctuations of prices on the world markets, usually with very accentuated upward tendencies, are creating great economic difficulties, even for the powerful industrialized countries. Because of this, in some of these countries there has recently been a clear economic recession, also tied to the tripling of the prices for the main raw materials: for petroleum the rise in prices has had a sharp evolution, being eleven times more expensive than the situation 7 years ago.

In order to avoid the direct dependency of our country's industrial production upon the accelerated rise of prices on the foreign markets, special stress has been placed and is being placed on broadening our own base of raw materials and energy, making it necessary to use all means to reduce imports. Without this stress, we will not be able to maintain the rates of material production established by the 12th Party Congress, production that will serve as the basis for the country's future economic-social development and the continued improvement of our people's level of well-being and civilization.

Extensive and Intensive Factors for Broadening the Base of Useful Substances

In the analysis of the problem of broadening our own base of natural raw materials, it is normal for us to start with the restrictive nature of raw material resources in general and, therefore, also for our country. We must likewise keep in mind the fact that in the past, prior to liberation, there sometimes was a rapacious

exploitation of natural resources, with a good portion of these resources, that portion being less profitable for those times, remaining under conditions that now require very costly additional investments. The development of modern extraction techniques has made it possible, for the most part, to overcome such difficulties. Additionally, the ever more thorough understanding of our country's subsoil has made it possible to introduce new types of raw materials into the industrial circuit, such as: poorer minerals, but in larger quantities that can compensate for the lower content; deposits of natural raw materials located at greater depths that were inaccessible to exploration in the past, but that are now exploitable under profitable conditions; and traditional raw materials from which we can now extract a number of useful elements or use that portion that not long ago was considered waste materials.

The potential of our country's underground mineral raw materials is not inexhaustible, but it can still constitute a solid base for the rigorous planning of the development of industrial production. The "inexhaustibility" of the subsoil must also be viewed from the point of view of the continuing evolution of the notion itself of useful raw materials. This is an evolution tied to the constant development of opportunities for investigation in those branches of science and technology which deal with the understanding of the natural processes for forming natural raw materials, their identification, the establishment of conditions under which to carry out extraction with maximum profitability and the complex and complete use of those substances extracted from the depths of the land.

Certainly, the broadening of our own base of raw materials must not be regarded solely from an extensive, quantitative point of view, but also from an intensive point of view which requires the judicious administration of raw materials, the elimination of waste and the channeling of raw material resources in those directions which ensure the highest productivity and their better use. Moreover, the growth of the level of use of raw materials should be achieved in a manner completely different from that for materials coming into the country as imports and for which large hard currency payments are still being made. It is clear that the growing interdependency of the national economy within the framework of the international division of labor will also certainly involve in the future the maintenance of trade in raw materials, objectively, and especially for those countries that are small or medium-sized which cannot have all the raw material resources that they need to achieve their economic-social development programs. The processing of imported raw materials must be achieved at such a level so as to ensure the recovery and surpassing of the total value of the imports through the quality and high technical level of the final products.

In this context, activities for scientific research, technological development and the introduction of technical progress in the extractive industry are characterized by a great diversity and complexity brought about by the vast area of the fields in which it is involved: geological and geophysical activities, the crude oil, natural gas, coal, ores, non-metallic substances and useful rock industries, technological research into the specific use of all the mentioned sub-branches, scientific assistance in-country and abroad and so forth.

Fields Investigated - Remarkable Achievements

Scientific research in the fields of geology and geophysics, the first stage of geological activities, is principally achieved by the Institute of Geology and Geophysics of the Ministry of Mining, Petroleum and Geology, which, through its completed studies, provides the substantiation for the phases of geological prospecting and exploration. In the five year plan just concluded (1976-1980), there was an accentuated and continuing diversification brought about by the need to have scientific substantiation and guidelines for geological activities at the level of assigned tasks. We will mention several of the more significant results obtained during this period.

Within the framework of the program to draw-up and publish national geological, metallogenetic and geophysical maps, for example, there was a notable intensification of activities. The maps produced yearly led to an increase in the level of understanding geological structures in the areas of interest for deposits of mineral substances and energy resources. This contributed to the more judicious orientation of geological activities in all phases. In the diversity of these activities, we should note a series of firsts: a coal prognosis map, a map of the mineral and thermal waters in Romania, the first metallogenetic-structural maps and lithological maps, the first cartographic picture of the variations in the thermal fluxuations throughout the country and a map of the recent vertical crustal movements.

Concomitantly with these and during the same period, there was a furthering and a diversification of research in the region of the Romanian continental shelf of the Black Sea (through batimetric, sedimentological, seismometric, magnetometric and gravimetric activities). We also identified regions containing sand deposits having heavy minerals and we obtained new data regarding the deep structures, the shape of the sea bottom and the nature of unconsolidated sediments, with implications for research into hydrocarbons.

In the field of primary energy sources it is appropriate to note the new data regarding understanding the superior coal deposits in the Banat and evaluating the perspectives for lignite in the Lugoj-Sinerg region. On the other hand, in cooperation with the user units within the ministry we completed reports covering calculations of reserves and studies for optimizing the geological projects network for lignite deposits in Oltenia (Salatruc, Rovinari-Mina and Poiana-Mina).

In order to outline the regions containing geothermal waters research was undertaken, with good results, in the country's Western Plain (Sacuieni-Galospetreu-Sinnicolau de Munte) and in the Baia Mare region (Levinta-Tarna Mare). For the first time in our country, peak research was carried out to evaluate the caloric potential of the dry hot rocks in the Eastern Carpathians. Thus, in 1980 we obtained a first look through modeling of the distribution of the caloric

potential at depths down to two-three kilometers, results that will be able to be used in the placement of certain experimental systems for extracting geothermal energy in Covasna and Harghita counties. In order to clarify the perspectives for iron ore in the Harghita Mountains (Vlahita-Chirui), the summary study that was completed showed the extension of the "Vlahita" type mineral group at a number of levels.

In the past five year plan, new perspective areas were outlined, including the extension of the known regions for solid mineral substances: non-ferrous and gold- and silver-bearing ores in the Eastern Carpathians, in the Metaliferi Mountains, in the northern Apuseni Mountains and in the Banat. Numerous research themes had as their objective identifying certain new mineral regions having a low mineral content. Results having important economic impact were obtained by the research in the Metaliferi Mountains for poor copper content ores, as well as those that led to an increase in understanding the economic potential of the Calimani-Gurghiu-Harghita chain, on the basis of complex geological, geophysical and geochemical research efforts.

The application of new methods and investigation techniques (the method of analysis of the isotopic composition of sulfur, the "in situ" method of analysis of copper, lead and zinc using a portable Romanian device, the magnetotelluric method, the radiowave method, the mercurimetric method and teledetection methods) permitted broadening the area covered by the research and the experiments under conditions of increasing the efficiency of all activities. Contributions to improving geophysical methods under complicated conditions of relief and geology, to studying coal deposits and to identifying geothermal regions, as well as to optimizing exploitation variants at the large deposits (Rosia Poeni, Bucium-Tarnita, Moldova Noua), were made through the elaboration of algorithms, calculating programs and methods, and mathematical modeling.

Our institute's production of a prototype geophysical device, with a small series production run, led to hard currency savings of approximately 40,000 dollars annually. Good results also came out of the research efforts into the technological use, during the laboratory stage, of poor mineral ores that are hard to prepare and certain non-metallic substances (low-content copper ore groups from Rosia Poeni and Bucium-Tarnita, limestone containing brucite, pyrophyllite, potassium feldspar and so forth).

New data was obtained on the basis of integrated geological-geophysical research efforts into deciphering the deep structure of the country. Among the results we can mention: the determination of the thickness of the sediments in the curved region of the Carpathians and in the Transylvanian Depression and of the main underground faults for the purpose of evaluating the geological prognosis for mineral resources and substantiating deep drilling (7,000 to 10,000 meters).

The use of the research conducted during the 1976-1980 five year plan is reflected in the increase in the percentage of scientific and technical assistance throughout the country and the elaboration, together with the user units and other units of the Ministry of Mining, Petroleum and Geology, of over 30 geological research projects involving mining and drilling in regions having economic perspectives in all the geologic units in the country. In addition to these, there is also the contribution of the researchers integrated with that of the specialized higher education, for example regarding the study of neogenous vulcanite and the metalogenesis associated with the Eastern Carpathians.

Quantifiable Economic Results

The broad scope of the scientific themes covered user requests of great diversity, from the scientific substantiation of prospecting and exploration programs to the direct application of certain methodologies to production, with quantifiable economic results. One aspect worth remembering is the fact that some types of geological and geophysical scientific research find their natural continuation in design activities for geological prospecting and exploration projects. As has been mentioned, the drawing up of projects is done in collaboration with prospecting and exploration units and, in some cases, also with those involved in mining. The total value of the projects drawn up with the help of research specialists during the last five year plan was in the range of hundreds of millions of lei. Clearly, the economic results of these scientific activities cannot, in this case, be directly evaluated. They can be found, however, over time in the permanent growth of geological reserves or forecasts for useful mineral substances. In this regard, several examples of the uses of research results in production are graphic:

- research efforts regarding the lithology of Jurassic and Neo-Comian formations in the Romanian Carpathians and in Dobrudja were evaluated by the user (the Enterprise for Special Geological Drilling and Projects) as being especially important for designing and carrying out exploratory drillings;
- the immediate application to production, at the mines and the preparation factory in the Suceava Mining Combine, of a methodology to identify copper, lead, zinc, iron and barium elements (in ores and in preparatory products) through the use of x-ray fluorescence, employing a device of Romanian production that was improved through the direct collaboration of specialists from the Institute of Geology and Geophysics, led to absolute savings, as calculated by the user, of approximately 500,000 lei annually.

Among the studies having, according to the users, positive results, we can mention: the research efforts that led to the identification of new reserves of non-ferrous ores to the north of Balan (in the Eastern Carpathians); research into certain mineral ore groups having uncertain genetic sites (for example, those in the Jidosita region); seismic research to identify the limits of certain salt massifs; and research regarding obtaining certain pyrophyllite concentrates from Viezuoroiu or using quartzites from the Lotru Mountains or serpentinites from the southern Banat.

It is also appropriate for us to mention the users' acceptance of new methods, with some of them truly being used for the first time. One example of this is the successful application of the radiowave method to identify "lost" mineral ore groupings within complicated tectonic deposits (Lesul Ursului, Vorta and so forth). To these valuable achievements, we can add that just in 1980 at the Institute of Geology and Geophysics there was a supplementary achievement, as a result of the express request of the users, of 14 important themes, while the costs per 1,000 lei of production-research were 835 lei.

Certainly, all the achievements in the past years in the fields to which we have referred are important as such, but they take on even more significance because they were designed for and are capable of serving as the basis of future activities, of facilitating the solution of certain increased quantitative and qualitative tasks and of placing geological and geophysical activities at a high level of efficiency and competitiveness. In order to adequately respond to the express requests of the national economy to increase the mineral raw material and energy resource bases, scientific research in the fields of geology and geophysics will have to increase its efforts, in our opinion, at least in two main directions: maintaining the level of research at the world level to avoid creating a gap in certain fields or accentuating this gap in other areas, and achieving an elastic and organic integration in the complex flux of interdisciplinary research in the extractive industry.

These desires will not be achieved if we do not continue the actions begun to concentrate activities on major projects, to further integration with production, to develop interdisciplinary research and to broaden the area of geological and geophysical investigation into new depths, as well as to extend research into an ever greater number of useful mineral substances. For these reasons, the objectives in the 1981-1985 five year plan that were approved for scientific research activities in the fields of geology and geophysics accurately reflect the directives of the 12th Party Congress regarding the sustained development of the mineral raw material and energy resource bases. In the approved plan, we foresee the majority of the major projects slated for the solution of problems of an applied nature, projects of great complexity whose achievement will require calling upon specialists from very diverse fields within the geological and geophysical sciences, at an unprecedented level of exigency.

[No 36, 4 Sep 81 pp 10-11 Part II]

[Text] The development of the energy base of raw materials and the covering of consumption needs as much as possible from our own resources constitute objectives of the first importance for the economic and social progress of the country. To do this, the investigation into and the most exacting knowledge of our own mineral and energy geological reserves represent some of the most important problems of scientific research activities. These activities are called upon to mobilize their forces and to improve their work methods so that during this five year plan they will considerably increase their contribution to uncovering new resources and substantiating efficient technological solutions for the purpose of using all deposits, including those that have poor content.

Future Guidelines

The objectives in the approved plan for scientific research activities in the fields of geology and geophysics during this five year plan accurately reflect the directives of the 12th Congress of the Romanian Communist Party regarding the sustained development of the mineral raw material and energy resource bases. Thus, in the approved plan we foresee the majority of the projects of sure importance slated for the solution of those problems of an applied nature, projects of great complexity whose achievement will require the contributions of specialists from the very diverse fields of the geological and geophysical sciences.

As a result, we foresee the intensification of research to produce national geological and geophysical maps in order to provide the substantiation for certain prospecting activities in a shorter timeframe. We have in mind the production of a larger number of geological, metallogenetic and hydrogeological maps. At the same time, gravimetric and magnetic maps will be completed for the entire area of the country, a new edition of a geological map of the country at a scale of 1:500,000 will be produced and work will be completed on an order 1 national gravimetric network.

For the purpose of identifying the areas of interest for energy mineral resources, systematic geological and geophysical research will be carried out to characterize those formations containing coal and combustible shale in the Eastern Carpathians, the Southern Carpathians and the Getic Depression. Beginning this year, in addition to the development of studies on lignite in Oltenia a sustained activity will be carried out in the Comanesti basin, where research efforts will produce geological maps and correlations of the coal strata, providing, together with the prospecting activities, the basis for drilling and mining activities.

Research is scheduled to be amplified and diversified for geothermal resources so that by the end of the five year plan the main areas within our country will be identified. Peak research to evaluate and use the energy potential of dry hot rocks will be concentrated in the Calimani-Gurghiu-Harghita and Oas-Gutii-Tibles mountainous volcanic chains.

An objective of great importance continues to be the intensification of research efforts to identify new areas of metallic substances. In this field, there is a broad effort involving the investigation of the potential for iron ore and manganese, as well as for other accompanying elements (nickel, chromium, titanium) in all the geological units in the Carpathians and Dobrudja. We can mention the successful experimentation, starting earlier this year, with certain prospecting methods in the manganese deposits in the Eastern Carpathians and for iron ore in the Gilau Mountains.

For non-ferrous ores and gold- and silver-bearing ores, activities will be intensified both in extending the known deposits and in working new regions, especially in the Eastern Carpathians, the Apuseni Mountains and in the Banat.

This will parallel the assistance given to the geological projects for complex ores, poor copper ores and so forth, projects based on scientific results obtained in recent years in these regions. Among the favorable achievements this year, we can mention the identification of a region of interest for non-ferrous ores probably associated with baritines in the Eastern Carpathians (the Bistrita Mountains). Special attention will be given during the current five year plan to research efforts into evaluating the potential for precious metals by extending research into the old crystalline formations in the Fagaras Mountains and the Banat Mountains, as well as into the associated alluvial deposits. In order to investigate geological structures and the metalogenetic potential at the second depth level, modern aero- geological and geophysical methods are applied to the ground and below the ground.

Complex studies to locate and precisely identify the dimensions of the lenticular bauxite deposits at various depths will be continued in the Apuseni Mountains using modern geophysical methods such as seismometrics and radiotransparency, methods being used experimentally in the Padurea Craiului Mountains. On the basis of the directives received, we will also considerably intensify research efforts for a large number of non-ferrous substances and useful rocks (baritine, talc, clay, magnesium rocks, tuffs, sands, limestones, ornamental rocks and so forth) in order to fully satisfy domestic requirements in this field.

In the region of the Black Sea continental shelf, complex geological and geophysical research efforts will be extended and diversified by introducing new investigative methods, such as gravimetry in combination with magnetometry and detailed seismic-acoustics to identify hidden geological structures. At the same time, studies must be continued for the purpose of determining the nature and thickness of the un-consolidated sediments both for identifying the regions of heavy mineral concentrates and for placing the off-shore drilling platforms. As a result, during the current five year plan research will be extended, depending upon the supply of adequate devices and equipment, into the region of the continental shelf and, later, into the region of greater depths.

Concomitantly with this and in addition to the research into the solid mineral resources and deposits in the Danube Delta and the adjacent marine regions, a systematic study will be carried out into the origins, nature and content of useful substances in the alluvial soils of the Danube and its main tributaries.

New Investigative Methods and Techniques

The need to fully cover and thoroughly penetrate the country's land in order to raise the level of knowledge and determine the structure and value of its resources requires the mobilization of the most efficient forces and methods. Carrying out this requirement has fully called upon the organizational and creative abilities of the researchers asked to resolve these tasks at a highly professional level.

In the area of creating and introducing new investigative methods and techniques, the adopted solutions involve the extension of teledetection techniques (depending upon conditions and the level of knowledge of our country's geology), as well as of aero-geophysical methods for the rapid, complementary investigation of certain large surface areas for the purpose of selecting the most favorable regions for placing geological projects. The growth in the efficiency of geological activities requires giving special attention to the introduction of certain top geophysical methods that will permit locating geological structures situated at great depths and deposits of useful metallic mineral substances of poor content, solving certain problems of mining hydrogeology and engineering geology for the extractive industry and so forth.

Basic research is centered on the interdisciplinary theme referring to the study of deep geological structures, for the purpose of identifying the elements of these structures, as well as the laws and conditions for creating rocks and ores. The results will contribute to improving geological hypotheses and the overall geological and metallogenetic picture and to substantiating and directing future geological activities. In this context, there is also the activity to periodically re-evaluate the forecasts for the main useful mineral substances, which will benefit from a much richer and better organized data base.

The production of a high-technology geophysical device of high efficiency (a prototype and a small series production run) requires the continuation of the construction and the improvement of proton-type magnetometers, resistometers, geothermometers, induced polarization receivers and so forth, and the transition to the production of new types such as: infrared thermal detectors, microprocessor analyzers, electromagnetic devices and others. For the production of these types of devices at the world level it is necessary for the value of imported parts not to exceed an average of 10 percent of the value of the device. The device produced will be used both to satisfy the needs of the Institute of Geology and Geophysics and the prospecting and explorations units within the system of the Ministry of Mines, Petroleum and Geology, in this way achieving significant hard currency savings.

In order to prepare the adequate organizational framework for achieving the objectives of scientific geological and geophysical research, during the current five year plan a considerable effort is required along the lines of introducing technical progress capable of ensuring the appropriate conditions for carrying out such a broad program. To this end, this year the Institute of Geology and Geophysics moved to scientific management according to a mixed system through research departments and programs that permit the concentration of forces and a more efficient control to resolve those tasks that stem from the research efforts contained in the special interdisciplinary programs drawn up at the level of the national economy under the guidance of the National Council of Science and Technology.

Also as a means of dealing with the high responsibility of the tasks of the current five year plan, we stress the decision of the responsible ministry leadership to move to the improvement of geological activities during the period of the field campaigns by working in nationally organized complex teams with participation by specialists, geologists, geophysicists and technicians and workers in research, prospecting and exploration. This, thus, provides a better integration with production, with verified advantages in the effectiveness of resolving the problems specific to field activities (modifications to solutions, effective intervention in the carrying out of projects, establishing priorities and future plans, and so forth).

Increasing Efforts in Step with the Requirements of the Economy

It must be stressed that in order to carry out activities under optimum conditions some shortcomings must be overcome. Thus, for example, the provision of the necessary number of personnel for scientific research in geology and geophysics is especially important, keeping in mind the specific nature of these activities requires the harmonious combination of field and laboratory research with a sustained and, sometimes, considerable physical and intellectual effort. For this, it is necessary for candidates, prior to entering specialized higher education, to express their option for these disciplines on the basis of sufficient information. Unfortunately, it has been found that the majority of the graduates of middle school possess only very vague information obtained generally from occasionally read popular materials. This is explainable if we keep in mind the fact that geology has not been for a long time a discipline at this level of education. For that reason, we feel that the efforts are fully justified that are being made to reintroduce the teaching of geology at the middle school level.

Another aspect of the problem is the assignment of graduates from the specialized departments in research. After many years, conditions have been created for some of the best graduates having real aptitudes in research to be assigned to institutes, after a term in production. This will contribute to especially redressing the current situation in geologic-geophysical scientific research where there has been a continuing increase in the average age and a decrease in the number of specialists along with an accentuation of the demands and level of complexity of these activities.

With regards to some of the difficulties related to getting supplies of modern research devices and equipment, we can stress that the top methodologies in the fields such as marine geology, teledetection, experimental mineralogy and petrology and so forth, will not be developed at the world level without acquiring the minimum necessary amount of equipment. Thus, for the continued marine geology research scheduled for this five year plan on the continental shelf of the Black Sea, and which will be extended on the shelf and into the region of greater depths, it will be necessary to have a research ship with a minimum supply of modern navigation and research equipment (navigation equipment using satellites for precision positioning, underwater television and photography equipment, seismo-acoustic devices, marine gravimetry and magnetometry devices, equipment for

dragging the sea bottom for sediment and polymetallic nodules, on-board computers and so forth). The provision of this equipment will allow during the coming period for research to be conducted in the oceans of the world, as foreseen by the Directives of the 12th Party Congress. It should be remembered that for the area of our country where we have a relatively advanced level of knowledge of geology in comparison with even some developed countries, teledetection is proving useful to the degree in which it can explore the relationship between the elements provided by satellite data and the views provided by geological maps produced on earth so that we can concentrate on those elements with geological and metalogenetic significance that do not appear on geological maps and that can serve in substantiating geological prognoses.

In basic research, it is necessary to develop modern methods in mineralogy and petrology, both in the field of analysis and in the experimental field. This, together with the experimental studies, contributes to the understanding of the processes of forming minerals from ores and rocks, and deposits, and, therefore, to the directing of geological projects at diverse depth levels. In order to deal with research efforts in this field, it is necessary to have at least an electronic micro-sounder and a device for simulating conditions for forming rocks and ores (achieving high temperatures and pressures). This device would also serve other institutes within the system of the Central Institute of Research for the Extractive Industry.

In the field of specialized information, there are difficulties related to both the activities of the national geologic library, which still does not operate at its normal capacity, and that of the Geologic Foundation, being organized on modern principles. In order to supply the Foundation, we have obtained the first stage of equipment to record, read and reproduce data on the basis of microfiche. Concomitantly with the recording of data, we will continue to provide services through the classical system and manage the archives storage spaces.

An acute problem for carrying out research activities in the fields of geology and geophysics is technical-material supply where difficulties are still being encountered in the acquisition of smaller quantities of the majority of the materials necessary for research and especially laboratory research (reactives, electronic components and so forth). Similarly, for many products the deliveries are made after long delays. During the last five year plan, this problem was the object of discussions organized within the ministry, the National Council of Science and Technology and other central organs in order to hear proposals so that scientific research can have its own basis for supplies.

So that scientific geological and geophysical research in Romania can maintain its traditions, position and unanimously recognized international prestige and so that it can contribute even more efficiently to the growth of the country's raw material and energy resource base, we will increase efforts to permanently modernize and introduce new methods and techniques and to apply as rapidly as possible the

results of research to the production activities of geological prospecting and exploration, as well as the results of the other user units in the national economy. During the current five year plan, whose first year happily coincides with the 75th anniversary of the founding of the Geologic Institute of Romania and the 100th anniversary of organized geologic activities in Romania, there will certainly be major changes in the manner of thinking and approaching scientific geological and geophysical research that, in support of applying the new economic-financial mechanism, will lead to important qualitative and efficiency changes in the process of understanding the country's geology and mineral potential.

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CHEMICAL INDUSTRY TO CONTINUE GROWING IN 1981-1985 PERIOD

Bucharest ROMANIA LIBERA in Romanian 7 Sep 81 pp 1, 3

[Article by M. Radian: "The Romanian Chemical Industry"]

[Text] Our people, each of us is living moments of great satisfaction covering the entire country with regards to its economic map and registering great progresses that have been obtained during the years of socialism through its industrialization and development of agriculture. And, we believe we are not wrong in stating that one of the strongest reasons for this satisfaction and patriotic pride is, for us, the chemical industry, which we consider with good reason a noble coat of arms of the development of socialist Romania.

Our satisfaction stems from an awareness of the fact that the high rates of industrial development in general, and especially in this industry, have served our interests to the highest levels and have contributed to the greatest part to the country's economic development and to an increase in the level of civilization and well-being, at the same time constituting a thorough base for its future development. Our people consider the party's orientation in this direction and its options regarding the development of the chemical industry at especially high rates as being very just and, even more, decisive for its entire destiny and for its well-being and independence. As a result, the people approve of it, accept it and implement it with so much enthusiasm. And this is not just because they realize the value of the chemical industry, which can convert into useful chemical products the raw materials existing in nature in large quantities (such as water and air, as well as salt, petroleum, coal, natural gas, ores, silicates, materials of animal or vegetal origins and industrial and agricultural waste), but for at least four reasons of infallible logic: the awareness that we are developing a branch for which we have our own raw materials base; the fact that the chemical industry can use these resources at the highest level, as well as our people's scientific and technical intelligence potential; the fact that it realizes the ever more powerful role of the chemical industry within the framework of the contemporary technical-scientific revolution and the development of all of the branches of the economy; and last, but not least, its conviction that the chemical industry daily takes on an ever more accentuated social role, contributing to its progress and prosperity and to the growth of its level of civilization. Our people rightly see in the chemicalization of the economy, all the industrial branches and agriculture one of the principal means of advancing the country on the road to communism.

The party's policy in the accentuated development of the Romanian chemical industry began precisely with the recognition of the fact that it represents one of the remarkable factors of economic-social progress, and the results obtained through the implementation of this policy are graphic. Compared to a general growth of industrial production in 1980 of approximately 50 times over in relation to that of 1938, the country's chemical industry production increased by 285 times over, or at a rate 5.5 times greater, with the last 16 years experiencing a true explosion in the Romanian chemical industry. The diversification of this industry has continually grown and its level of use of raw materials has constantly gone up, with over 1,300 highly technical chemical industry facilities being put into operation in just the last decade. Just how great this progress is can also be deduced from the fact that while during this period the percentage of chemical industry production within overall worldwide industrial production was 4.3 percent, in our country the figure was up to 6.7 percent. This is even better demonstrated if we point out that from 1965 to 1980 the percentage in Romania increased from 6.7 percent to 13.3 percent while overall worldwide production grew from 10.9 percent to 15.2 percent. With regards to the average annual rate of growth, it is appropriate to note that while at the world level it experienced oscillations, falling from 12.5 percent during 1971-75 to 8.5 percent in 1980, the average annual rate of production for the Romanian chemical industry continually grew during this period from 15.8 percent to 17.1 percent. It is a fact that Romania today is in 10th place in the world in chemical production and for a series of products which constitute important criteria in evaluating the level of economic development this evolution in recent years allows us to make a favorable comparison, based on a relationship of production per inhabitant, with some of the most industrially developed countries. This can be seen in a comparison of several of the most important products that determine the progress of the chemical industry, as well as that of the other branches of the economy, such as agriculture, light industry, machine building, construction materials and transportation.

With regards to the data in the table [see the table on next page], I could mention several items that could help the reader even more to realize the scope of the performance of the Romanian chemical industry. For ammonia, for example, the principal raw material for nitrogen fertilizer, as well as for very many compounds in the chemical industry and other industrial branches, the level of production per inhabitant attained in Romania in 1977 places it ahead of the countries with which it is compared. For sulphuric acid production, likewise a very broadly used raw material in the national economy, during the same year we attained the per inhabitant levels of the developed countries, as well as for calcium carbonate and sodium hydrate. It is also graphic to see how close our level of per inhabitant production is in the petrochemical industry sub-branch which, as is known, uses raw materials at much higher levels, giving the chemical industry a truly modern nature. The perspectives for plastics production, whose economic and social importance we all realize, were half way along last year in comparison to the developed countries, and we will reach these countries' levels during the current five year plan. For synthetic fibers and threads, we have already reached the level of the countries with a developed chemical industry.

The Comparative Situation Regarding Production per Inhabitant for Certain Chemical Products in the United States, France and the FRG in 1976, and in Romania in 1977 and 1980 (in kilograms per inhabitant)

(1) Denumirea produsului	S.U.A. 1976	Franta 1976	R.D.G. 1976	România 1977	1980
Amoniac (in masă - N) (2)	71,7	33,34	88,8	183,8	188,8
Acid sulfuric (3)	144,2	74,33	58,6	66,6	113,8
Sodă calcinată (4)	32,1	24,69	49,9	48,8	43,8
Sodă caustică (5)	47,6	23,82	23,9	33,3	49,7
Clor (6)	46,5	24,44	23,5	18,9	34,5
Metanol (7)	13,7	3,93	14,3	18,7	20,8
Mase plastice (8)	60,0	53,00	40,0	23,2	44,9
Fibre și fibre sintetice (9)	11,9	4,21	7,2	3,8	8,5
Cauciuc sintetic (10)	10,4	8,22	8,5	6,4	14,2

* 1980 ** 1975

Source: "The Strategy for Development in the Chemical Industry," Mihail Florescu, Politica Publishing House, 1981.

Key:

- | | |
|------------------------------|---------------------------------|
| 1. Type of product | 6. Chlorine |
| 2. Ammonia (in nitrogen - N) | 7. Methanol |
| 3. Sulphuric acid | 8. Plastics |
| 4. Calcium carbonate | 9. Synthetic fibers and threads |
| 5. Sodium hydrate | 10. Synthetic rubber |

These are merely several examples gathered from among many that speak for themselves about the successes of the Romanian people on the path of developing a modern chemical industry. But, perhaps do we not encounter the successes of this policy and do we not perhaps feel the positive influences of them in any of the fields of our activities, be they in the mining, petroleum or steel industries, in the semiconductor industry, in the machine building industry, in the electrotechny industry, in telecommunications, in power equipment, in ship building? And the automobile industry, could it be conceived of today without plastic materials, not to mention rubber products? The same goes for the civil construction industry, industrial construction industry, the furniture industry, clothing and footwear, the medicines industry and hygiene maintenance products. Finally, how could we conceive of progress in agriculture without chemical fertilizers, herbicides, fungicides or pesticides, without vitamins, amino acids and medicines in zoo-techny and so forth.

Speaking of the great progress of the Romanian chemical industry, especially in the last 15 years, it is appropriate for us to point out that it is closely tied to, based upon and is being based upon the contribution of scientific research and technological engineering, which have the great merits of being directed at

the major problems of production activities, making available to industry those technologies and techniques that have allowed it to attain a high technical and competitive level on the international market. This positive orientation and the organization of research on the basis of modern concepts are closely tied to the activities of comrade academician engineer Dr Elena Ceausescu, a prominent personality of the contemporary scientific world who has promoted a daring, creative research effort within all the units of the Central Institute of Chemistry, having the needs of production as its permanent objective.

Among the numerous achievements of great prestige of Romanian chemical research and technological engineering, we note, first of all, the technology for producing poly-isoprenic rubber, a technology of great economic and scientific value created by a collective group headed and directly guided by academician engineer Dr Elena Ceausescu. There also are: the technology for producing polyesters for polyurethane foam, the technologies for hydrotreating petroleum, fuel oil and others. These are applied research efforts which led to great profits for the country's economy, both by putting an end to some imports and by increasing exports.

Along these ideas, it is fitting for us to note that our research gives special attention to the extension of the polymer-making processes through the use of superactive catalytic agents, the move to using enzymatic catalysts and the development of unified intensive processes in the fields of fractional agents and purifiers at the level of the requirements imposed by the processes for making polymers and sintering high purity reagents for electronics, aviation and so forth. This attention will also be given to the development of research in the biotechnologies, as well as in the interdisciplinary research between physics and chemistry and chemistry and biology, the protection of the environment and others.

We should also especially stress the research efforts of our chemists for the purpose of creating certain technologies for products made with reduced levels of energy consumption, just as we are dealing with alternative sources of energy (solar, wind and geothermal), coal gasification for the purpose of replacing natural gas, thus opening a new future for the Romanian carbo-chemical industry.

The provisions of the 1981-85 five year plan confirm the continuity of the strategies in the field of developing chemical production and the chemicalization of production, calling for their intensification. In support of our assertions, we present the fact that during these 5 years the chemical industry will experience the highest rate of development in comparison with the other branches of the national economy, 10.2 percent per year or an increase of 62.7 percent in 1985 compared to 1980 production. The essential criterion that stands at the basis of the development of the chemical industry lies in the restructuring of the branch's production by accentuating the rate of growth in the production of highly technical products and groups of products that are produced using reduced levels of energy consumption, make maximum use of raw materials and incorporate an ever larger amount of highly

skilled labor. The principal orientation for this period is directed towards increasing the level of processing of petroleum and natural gas, making new superior products from plastics and chemical fibers and threads, developing precision chemistry and making special materials for electronics and other high technology fields. At the same time, we will place special stress on making new technologies that will ensure a higher use of raw materials, a reduction of material consumption and a production of certain quality products. Similarly, there will be an increase in the production of the inorganic chemical industry on the basis of higher processing of certain domestic resources, and there will be an accentuation of the development of the production of medicines, dyes, detergents, cosmetic articles and perfumes. In accordance with the requirements of agriculture, in the field of chemical fertilizers we will achieve an appropriate balance between fertilizers based on nitrogen, phosphorus and potassium, while the increase in the production of pesticides will be achieved on the basis of varieties having increased efficiency and lowered remanence.

Furthermore, as proof of the consistency in the orientation towards the higher use of resources and the greatest possible satisfaction of the needs of the national economy there are the proposed levels themselves, of which we will merely quote a few examples: the production of artificial and synthetic fibers and threads will increase by 2.9 times, production of synthetic rubber, plastic products and basic macromolecular products by over 2 times, and production of tires by 192.1 percent compared to 1980. For its part, the production of the chemical fertilizer industry will increase by 65.6 percent, and for medicines it will triple. As much as the importance of the chemical industry will increase within the overall national economy during this five year plan, the reader will be able to see this for himself if we point out to him that by 1985 it will have to provide 99 percent of the necessary amount of threads and fibers, 90 percent of the dyes, at least 92 percent of the synthetic rubber and 98 percent of the tires, as well as all of the necessary amount of chemical fertilizers, lacquers, paints and so forth. Along these lines, we should stress the orientation, through the application of the results of our own research at the Central Institute of Chemistry, towards moving away from the development of high tonnage production to the priority development refined compounds and small tonnages (medicines, cosmetics, supplements for industry, reagents, catalytic agents, products for microelectronics, dyes and intermediaries). Similarly, we will stress the direction of Romanian chemical research towards the reduction of energy consumption and the growth of installation productivity by creating new catalytic systems that will ensure the accentuated reduction of working temperatures and pressures. Special attention will also be given to creating solutions for bringing new raw material and energy sources into the economic processes through the chemical use of biomass, especially for the production of synthetic fuels, polymers and chemical fibers.

We cannot conclude this succinct review of the Romanian chemical industry without noting the beautiful perspectives that are opening up before this branch, one of the most efficient economic branches from the point of view of labor productivity (17 times greater in 1980 than in 1950), investments efficiency (compared to 1965 the branch's production in 1975 was 5.5 times greater while the volume of investments was only 3.5 times greater) and hard currency contribution (together with the machine building industry, the chemical industry in 1985 will have approximately 60 percent of the total volume of exports). The over 200,000 workers in this branch, aware of the economic-social role of their work, are determined, as was recently shown during comrade Nicolae Ceausescu's working visit to Prahova County, to honorably fulfill their obligations and, first of all, to fully honor their 1981 plan tasks.

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LACK OF SPARE PARTS HAMPERS ACTIVITIES OF FISHING FLEET

Bucharest SCINTEIA in Romanian 2 Sep 81 p 3

[Article by Neculai Amihulesei: "Supplying Spare Parts to Repair Ocean-going Fishing Ships"]

[Text] The Romanian oceanic fishing fleet totals 40 fishing ships and 9 transports. Using these ships, equipped with equipment of a highly technical nature, the fleet must catch this year over 200,000 tons of fish. The calculated task is one that can be fulfilled only under conditions where all the ships are operating. Unfortunately, however, some of them, and not just a few, are not operating and are in ports. This year, for example, of the 27 ships planned to be fishing each day, only 12 to 16 are carrying out activities. Engineer Nicolae Ivan, the technical director of the Tulcea Oceanic Fishing Enterprise, told us: "What is more serious is that the number of active ships is constantly falling. This is also because they are not repaired within the planned timeframes. For years the Ministry of the Machine Building Industry, and more precisely the shipyards subordinate to it, have not adhered to the repair schedules."

Let us give some examples. For all of 1980, the ships "Semenic," "Ialomita" and "Trotus" were tied up for repairs at the docks of the Enterprise of Ship Construction and Technological Equipment in Tulcea. The explanation? The enterprise could not honor its obligations for capital repairs because it lacked 15 tons of OLT-35R pipes for the refrigeration equipment. After one and one-half years, in June 1981, the "Semenic" was turned over to the fleet. The "Trotus" went in for repairs on 12 October 1979, and is still not ready to go to sea. It is estimated that repairs will be completed around the end of October of this year. The cause of this delay? In addition to the lack of pipes for the refrigeration equipment, we have the fact that the gear box for the propeller shaft could not be reconditioned and they had to wait for the arrive of certain gears that had to be imported. After these supply problems were solved, the refrigeration compressors broke. The "Galati" could not have its repairs completed since the Resita Machine Building Enterprise refused to correct the main motor shaft (the shaft has been at Resita for over 1 year). These are merely several examples that are significant, however, to show the manner in which repairs are carried out on the oceanic fishing ships.

In thumbing through the stack of papers contained in the "spare parts file" existing at the Oceanic Fishing Enterprise, you get the feeling that you are falling into "troubled waters," into a maze with no exit. According to the laws in effect both for 1980 and for 1981, the Oceanic Fishing Enterprise made the necessary complaints to the Ministry of the Machine Building Industry and the Galati Naval Industrial Central 9 months in advance of the beginning of the new plan in order to acquire spare parts and materials. Despite this, in 1980 of the 8,606 spare parts items necessary to repair the ships, the machine building units provided only 133; in 1981, of the 10,588 items there are only 157, without anything being done so far.

Nor is the situation for providing materials for repair work any better. Both last year and this year, the Tulcea Enterprise of Ship Construction and Technological Equipment did not have sufficient quantities of aluminum electrodes, OLT-35R pipe, asbestos and steel cable, just to mention only a few of the material shortages. It should also be added that the Galati Naval Industrial Central, the parent organization of the Tulcea Enterprise of Ship Construction and Technological Equipment, did not respond to the requests made to it. It is certain that for 1981 the Ministry of the Machine Building Industry did not put into its production plan those several thousands of spare parts items necessary to repair the fishing ships. Paradoxically, the ships are scheduled for repairs, but no one is making the spare parts!

And, things do not stop here. Engineer Ion Vasile, chief of the mechano-energy section at the Oceanic Fishing Enterprise, told us of a totally abnormal situation: We are importing R3 turbo-blowers while similar, and even better, turbo-blowers are produced at the Brasov "Hidromecanica" Enterprise. I put in an order to have these type of turbo-blowers produced for us. After a year of discussion and intervention at the ministry, I received 10 turbo-blowers for which we had to obtain a series of imported parts, parts which also could be produced in-country. Up to now, we have not been sure if we will receive additional turbo-blowers, with the necessary number for us being 50 each year. No one wants to understand that we are not just talking about some money that our enterprise might lose, but the country's hard currency if we have to import these spare parts. Another example. We purchased from the port of Las Palmas piston rings for the compressor motor on one of our ships and the parts bore the inscription 'Made in Romania.' So, we contacted the producer units in our country so they could deliver these piston rings to us. They did not want to hear about it! We are still importing piston rings each year worth 500,000 lei in hard currency, piston rings that are produced at Pitesti." Additional comments are unnecessary!

That spare parts can be produced in-country is demonstrated for us by the workers in the repair shops of the Oceanic Fishing Enterprise. With modest equipment, they annually produce parts worth one million lei. Last year, they made 27 items of the most difficult types and reconditioned parts worth 1.6 million lei. This year, the Oceanic Fishing Enterprise has proposed to produce, in cooperation with

other economic units in the county, more spare parts than last year, worth over one million lei, and to recondition parts worth two million lei. We should also remember the concerns for the proper maintenance of the ships. The trawler "Delta Dunarii" was transformed into a repair ship. Equipped with spare parts and equipment and with a crew of 35 craftsmen, the repair ship carries out current repairs and overhauls directly in the fishing areas. In this manner, repair costs this year will be reduced by over one million lei.

The workers in the enterprise are not helped, however, as would be natural, by the machine building units which have the task of producing spare parts and making the repairs within the planned timeframes. The technical director of the Oceanic Fishing Enterprise told us that dozens of commissions have come to Tulcea in recent years from the Ministry of the Machine Building Industry and the Department of the Food Industry. Each time they completed plans for measures to be taken and each one promised to resolve the problems; however, with regards to providing spare parts no one has been involved and no one is involved. The technical director of the Oceanic Fishing Enterprise told us: "We place orders for spare parts. The Ministry of the Machine Building Industry asks us for production documentation, but after that it cannot find anyone to produce these parts. This situation has gone on for several years. I propose that on the basis of our orders the ministry establish those units that can produce the parts and, on the basis of the type of equipment these units have, we will complete the documentation. The technical means available to the machine building units in our country permit the production of all the parts we need. The refusal of these enterprises to cooperate with us costs the national economy several hundreds of millions of lei each year. Let us no longer talk of the implications of failing to achieve the oceanic fish production plan."

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SUCCESS OF 1981 TOURIST SEASON DESCRIBED

Bucharest ROMANIA LIBERA in Romanian 3 Sep 81 pp 1, 2

[Interview with Ion Tudor, first deputy minister of tourism, and Ion Florea, director of the "CARPATI" National Tourism Office in Bucharest, by Mircea Scripca, place and date not specified: "Romania in the International Tourism Circuit"]

[Text] Our beautiful resorts at the seashore, in the mountains and in other picturesque locations of the country are host to, in addition to the workers from our own country, numerous guests from abroad. Details about the conditions for these guests so they can have the most enjoyable vacations in our country, as well as the impressions of and opinions expressed by these guests were given to us at the Ministry of Tourism by comrade Ion Tudor, first deputy minister of tourism, and comrade Ion Florea, the director of the "CARPATI" National Tourism Office in Bucharest.

[Question] To begin with, please tell us what is the position of Romanian tourism within the framework of international tourism, stressing the peculiarities that characterize our tourism.

Tudor: Romanian tourism has gained a well-deserved place in international tourism, being appreciated in different countries of the world. It is within the context of the foreign policy promoted by comrade Nicolae Ceausescu, the secretary general of the party, of broadening the area of international relations, of bringing closer together and understanding peoples, of having the best possible mutual understanding and of consolidating peace throughout the entire world.

Because of the sustained support given by our party and state to the development and modernization of the material base of tourism, the continuing diversification of our vacations and the richness of the tourist programs, as well as the traditionally hospitable spirit which characterizes our people, Romania is receiving an ever more significant number of foreign tourists. In 1980, we received one million foreign tourists, with the majority of them coming through tourist agencies, compared to only 100,000 that visited our country two decades ago.

The tourist features of Romania are determined by its visual beauty, the natural setting and the climatic conditions that are favorable for having tourism during all the seasons, and the richness of the material and spiritual values created by our people during its long history.

[Question] In order to be specific, we ask you to give us some data regarding the number of foreign tourists that arrived this year.

Tudor: The affirmation of our tourism on the international level is demonstrated by the continuing increase in the number of foreign tourists, with this total being, for the first 8 months of the year, over 10 percent better than that of the same period last year. From May through 1 September, the seashore hosted approximately 300,000 foreign guests. Currently, approximately 40,000 tourists from numerous countries around the world are enjoying their vacations on the seashore.

During the same timeframe, the mountain resorts received approximately 40,000 foreign visitors, and the balneary resorts received over 20,000. During the same timeframe, everywhere, from Bucharest to the northern part of Moldavia or from the Delta region to Timisoara, we hosted tourists from different countries and continents of the world.

[Question] The presence of an ever more significant number of foreign tourists in our country expresses the great opening towards a better understanding between peoples, as occasioned by our international tourism. From which countries of the world do our visitors principally come?

Tudor: Most of them come from the socialist countries, countries with which we maintain permanent relations that are finalized in touristic trade carried out under mutually advantageous conditions. Many tourists come from the other European countries, primarily from West Germany, France, Greece, England, Austria, the Scandinavian countries, Belgium, Holland, Spain, Italy and so forth. At the same time, there are numerous arrivals in our country stemming from the other continents, especially from countries such as the United States, Canada, the Arab countries, Israel, Japan and so forth.

Florea: We have concluded tourism agreements and conventions at the governmental level with a significant number of countries. Similarly, Romanian tourism agencies maintain commercial relations, on the basis of contracts, with partners in nearly 50 countries through which each year approximately one million tourists arrive in organized groups. The reasons for traveling for these people, likewise, are very diverse, from the call of the sun on the seashore and the need for balneary treatment to socio-professional exchanges of experiences and ornithological studies in the Danube Delta or speology in the caves in the Carpathians.

[Question] With what impressions do the foreign tourists leave Romania?

Florea: With among the best impressions and evaluations. But, let us together thumb through one of the latest selections of these comments, as expressed in the books of honor in the tourist hotels in our country, in letters sent to Romanian tourism units and in the pages of the foreign press.

"The cure here in Romania at Eforie-Nord is formidable," writes Lucienne Stocard (France) in July 1981. "I took a trip into northern Moldavia, extremely interesting. I will surely return to Romania next year." "I was at the seashore," notes G. A. Murasion-Essentuki in the name of a group of tourists from the Stavropol region of the USSR, "and we enjoyed the trip very much. We felt that the Romanian government takes care of the people and works to develop international tourism." For his part professor Matzuura Morishisa from a high school in Kushima (Japan) states: "A beautiful trip in a beautiful country, where I felt at home." An eloquent evaluation is made by the businessman Munir Emad Ihan from Lahore: "The Romanian seashore seems to me to be equally as beautiful as the beaches in Miami, which I know very well." The qualities of the seashore are also pointed out by Malcom Palle of London in August 1981: "Unlike Spain or Italy where you purely and simply stay for 2 weeks on the beach, Romania offers another type of vacation where, in addition to the beach, you can take many trips on unusually beautiful itineraries (Valca Prahovei, the northern part of Moldavia, Bucharest and so forth), as well as trips to other places, such as Istanbul, Cairo, Athens or Kiev."

Numerous other tourists pointed out the special qualities of our balneo-climatic resorts. "In 1981, I returned for a fourth time to Romania," writes H. De Young, a businessman from Enschede, Holland. "I had Parkinson's disease and after four cures on the basis of Gerovital and physical therapy the disease has improved a great deal. I will come back." "Thanks to the treatment at the Felix baths, where I visited in years past, I feel at 74 years of age healthy and full of vitality," declares Jemmy Lauren of Denmark. "A resort with some miraculous people, quality services and products and a truly miraculous acupuncture treatment," writes Wh. Carfet of England in June 1981 while at Poiana Brasov. For his part, Dr John F. Statham, secretary general of the Inter-American Congress of Doctors and Surgeons, notes: "As a patient, I checked the efficiency of treatments on me (geriatric treatments). As a doctor, I will recommend it to others. Romania is for me a beautiful country with a rich history, with cultural traditions, hospitable people, distinguished doctors and well-equipped hospitals. It is a country that deserves to be known up-close."

[Question] The impressions of our guests are moving. They explain the international prestige that our tourism enjoys. What will continue to be done along these lines?

Tudor: The evaluations expressed by our guests require us to intensify our efforts to obtain even better results in our activities. In this regard, we are currently working to give our foreign guests the opportunities to enjoy the beauty and richness of fall in our country. We have special tourist programs connected with the "George Enescu Festival" and the Bucharest International Fair, as well as other events. And, beginning in December, for the winter sports vacations and end-of-year celebrations, we are anticipating for the following period a higher tourist business than that of the second half of last year.

Synthetically, I can show you that our concerns for the current five year plan principally call for: the full affirmation of Romanian tourism on an international level; the broad opening of traffic towards Romania from other countries farther away; the increase in the number of visitors in mountain and balneary resorts throughout the entire year; the extension of travel tours, of cruises (on the sea and the Danube), of tours of a sporting nature (skiing, riding, water sports, fishing); the development of socio-professional tourism and tourism for young people having an instructional-educational theme and exchanges of experiences; the improvement of recreational means and tourist trade in general, thus making profitable our tourist services at a higher level; and the continuing growth of the level of comfort of the tourist units and the standard of services at these units so that a vacation in Romania can be a complete joy and pleasure.

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